lib_locks: Locks for concurrency (README)

Publication Date: 2026/2/10
Document Number: XM-006390-UG v2.4.0

IN THIS DOCUMENT

vendor
XMOS

version
2.4.0

scope
General Use

description
Access to hardware and software locks for concurrent C programs

category
General Purpose

keywords
Utility

devices
xcore.ai, xcore-200

1 Summary

This library provides access to hardware and software locks for use in concurrent C programs. However, it is generally not safe to use these for marshaling within XC, due to the assumptions XC makes about safe concurrent data access.

2 Features

- Hardware locks: fast and power efficient but there are a limited number per tile
- Software locks: slower but an unlimited number can be used
- Intertile lock (xcore.ai only): single lock available for guarding chip-wide access to resources

3 Known issues

- Intertile lock uses a MIPI D-PHY register and so cannot be used when MIPI D-PHY is enabled
- Intertile lock requires that both tiles are running at the same core frequency. Clocking down one tile may very rarely result in unreliable locking.

4 Development repo

- lib_locks

5 Required tools

- XMOS XTC Tools: 15.3.1

6 Required libraries (dependencies)

- None

7 Related application notes

- None

8 Support

This package is supported by XMOS Ltd. Issues can be raised against the software at www.xmos.com/support